Synthesis of dense poly(acrylic acid) brushes and their interaction with amine-functional silsesquioxane nanoparticles

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Supporting information to the paper

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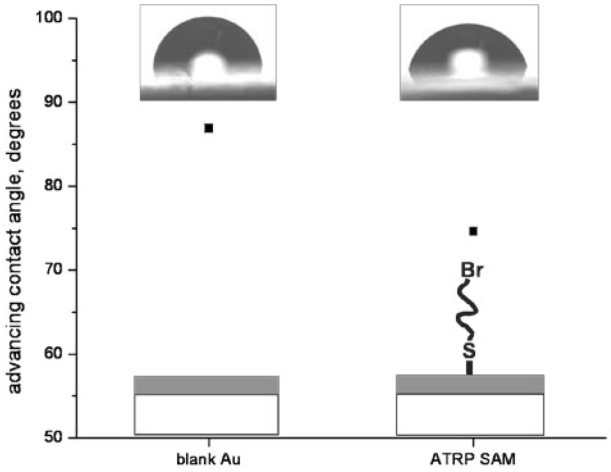

Figure S1. Water contact angle evolution during the monopod monolayer formation.

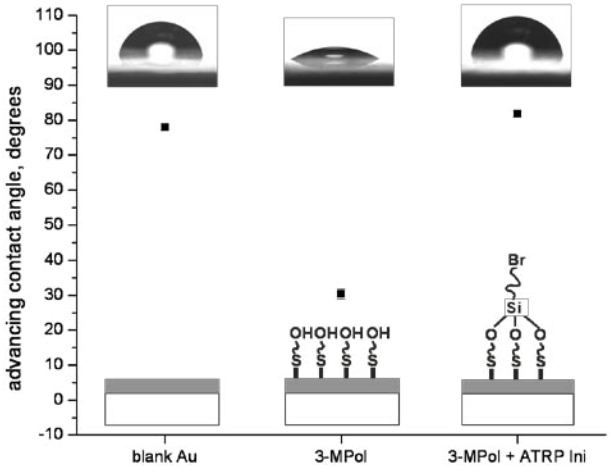

Figure S2. Water contact angle evolution during the tripod monolayer formation.

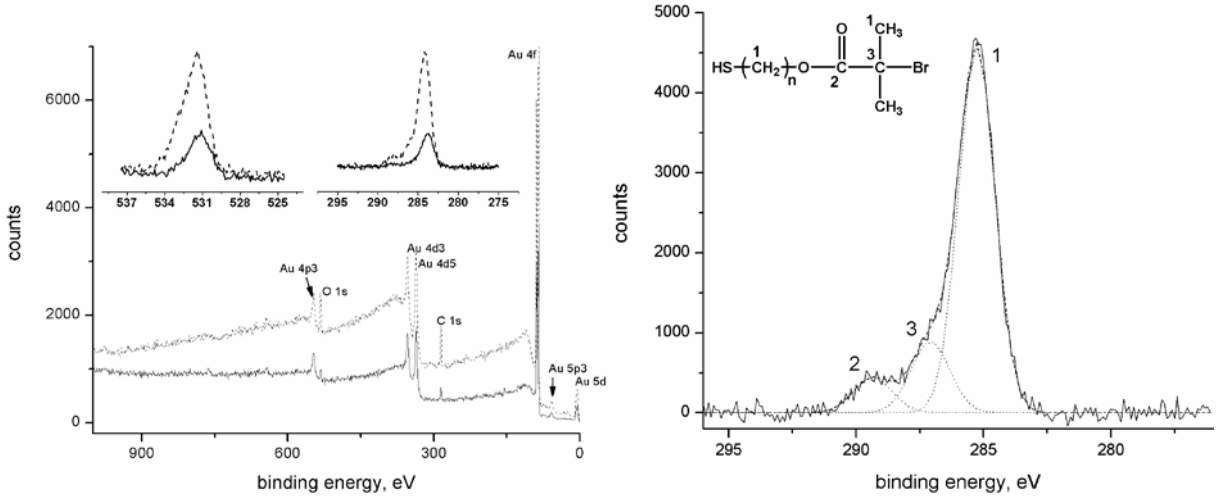

Figure S3. XPS data of the monopod monolayer formation for blank gold (solid line) and the ATRP initiator monolayer (I) (dashed line). Left: The insets show a pronounced increase in the C 1s and the O 1s signal after the initiator deposition. Right: The high resolution measurement of the C 1s peak reveals the different carbon-species, which are present in the initiator.

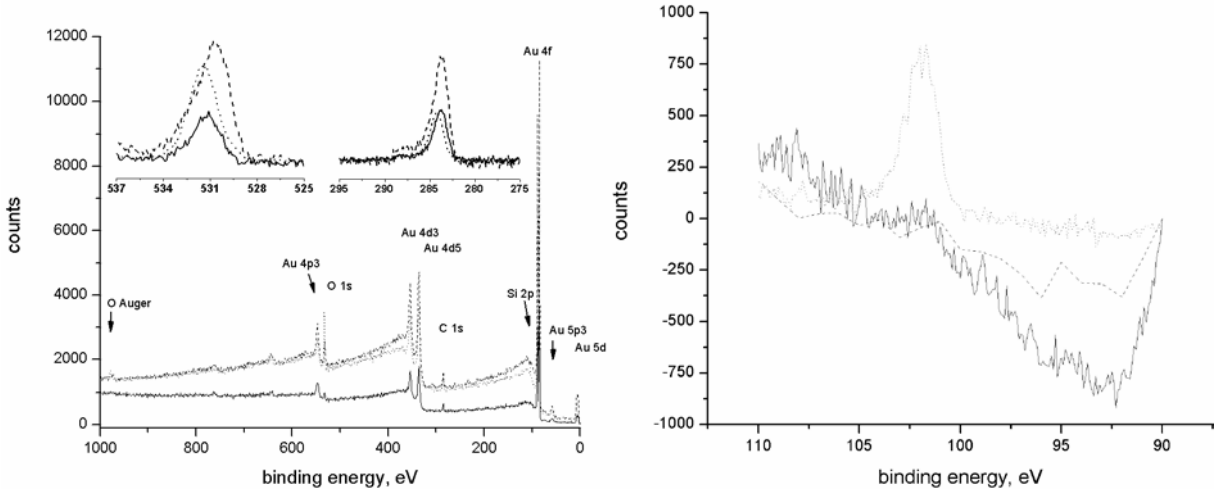

Figure S4. XPS data of the tripod monolayer formation for blank gold (solid line), the monolayer of 3-MPol (dashed line) and the immobilised ATRP initiator (II) (dotted line) Left: The C 1s and O 1s signal increases with increasing material deposition. Right: A peak at the Si 2p region evolves after initiator (II) immobilization.

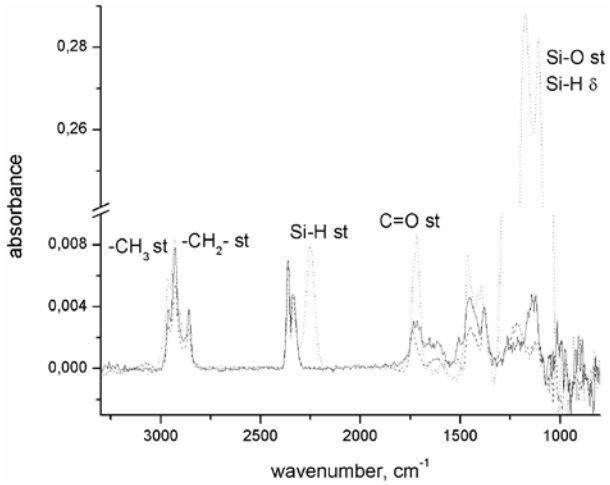

Figure S5. PM-IRRAS measurement of the tripod monolayer for blank gold (solid line), the monolayer of 3-MPol (dashed line) and the immobilised ATRP initiator (II) (dotted line). The immobilisation of the initiator is clearly seen by the evolution of characteristic Si-O, Si-H (residues of the initiator synthesis) and C=O bands.

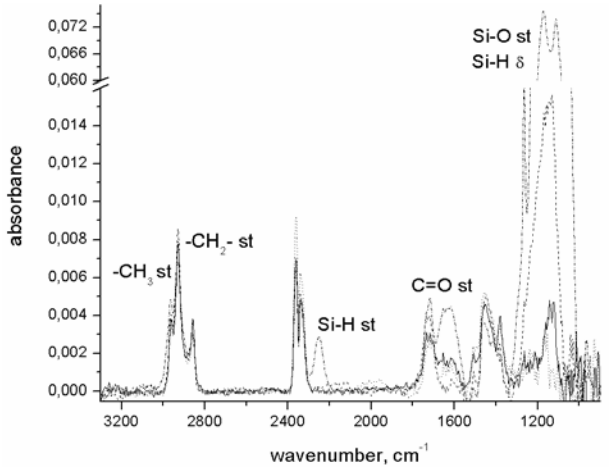

Figure S6. PM-IRRAS measurement of the crosslinked monolayer for blank gold (solid line), the monolayer of 3-MPTMS (dashed line), the hydrolysed monolayer of 3-MPTMS (dotted line) and the immobilised initiator (II) (dash-dotted line). The evolution of the Si-O and C=O bands indicate the immobilisation of the initiator on top of the crosslinked monolayer.